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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------|-------------|----------------------|---------------------|------------------|
| 10/065,981 | 12/06/2002 | Eugene Olczak | 040849-0264 | 4517 |
| 22428 | 7590 | 02/09/2006 | EXAMINER | |
| FOLEY AND LARDNER LLP | | | LEE, GUIYOUNG | |
| SUITE 500 | | | ART UNIT | |
| 3000 K STREET NW | | | PAPER NUMBER | |
| WASHINGTON, DC 20007 | | | 2875 | |

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------|----------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/065,981 | OLCZAK, EUGENE | |
| | Examiner | Art Unit | |
| | Guiyoung Lee | 2875 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-10,12-15 and 17-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4,5,18,22 and 23 is/are allowed.
- 6) ☒ Claim(s) 6-9,12,13,15,17 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 10,14,24 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>0804</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Prelim./Amdt.

1. Receipt is acknowledged of the Amendment filed 11/22/2005.
2. Claims 1, 4-10, 12-15, and 17-25 are pending.

Response to Arguments

3. In response to applicant's argument that Ookawa does not disclose unexpected results by the combination of the refractive index and peak angle range as recited in claim 6. Examiner does not completely agree with Applicant arguments. Applicant recites the peak angle is greater than 90 degrees and less than 105 degrees and the refractive index are between approximately 1.65 and 1.8. On the other hand, Ookawa discloses the vertical angle of the prism is preferably within the range of 80 degree to 100 degree and the refractive index of lens portions is preferably high, for example, 1.55 or more, preferably 1.6 or more. Therefore, Applicant's refractive index and peak angle range of the prism is within the ranges of the Ookawa's refractive index and peak angle. Applicant further argues that Ookawa does not disclose unexpected results, which is suppressing side lobes by the combination of increased refractive index and peak angle. However, applicant only discloses the unexpected result by increasing the refractive index from 1.6 to 1.75 and by increasing the peak prism angle from 90 degree to about 100 degree. Applicant fails to disclose unexpected result by increasing the refractive index more than 1.75 and increasing the peak prism angle above 100 degree. In other word, applicant fails to disclose criticality of the claimed range of the refractive index and the peak prism angle.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-7 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ookawa et al. (US 6,628,460 B1).

Re claims 6-7 and 19: Ookawa discloses an optical substrate having a prism structure characterized by a peak angle in the range of 80 degree to 100 degree (col. 5, line 58) and a refractive index of 1.6 or more (col. 5, line 65). Ookawa does not specifically disclose the peak angle of the prism structure in the range of 90 degree to 105 degree and the refractive index of between approximately 1.65 and 1.8. However, the claimed range lie inside ranges disclosed by Ookawa. It would have been obvious to one having ordinary skill in the art at the time the invention was made to narrow Ookawa's peak angle range between 80 degree to and 100 degree and the refractive index between approximately 1.65 and 1.8, since it has been held that in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90(CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

Further, Ookawa discloses that the ultraviolet curable material composition is supplied in the prism structure in order to prevent a bubble generation (col. 2, line 35+).

5. Claims 8-9, 12-13, 15, 17, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ookawa in view of Higuchi et al (US 5,914,759) and Lu (US 2002/0097496 A1).

Re claims 8-9, 12-13, 15, 17, and 20-21: Ookawa's teachings have been discussed above.

Ookawa discloses the peak angle range of the prism and the refractive index as set forth in the claim. Ookawa does not disclose that a cross section of the prism structure have a curved facet or a plurality of facets. Higuchi discloses a prism structure having a curved facet (Fig. 17 and Fig. 18), and Lu discloses a prism structure having a plurality of facets (Fig. 6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Ookawa's prism structure to include a curved facet or a plurality of facets as Higuchi and Lu showed because such modification of prism structure make it possible to control and redirect propagation direction of the light and such modification would be within the level of ordinary skill in the art.

Allowable Subject Matter

9. Claims 1, 4-5, 18 and 22-23 are allowed.

10. Claims 10, 14, and 24-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:
With regard to claims 1, 4-5, 10, 14, 18, 22-25, the prior art of record does not disclose the

claimed optical substrate having a prism structure characterized by a cross section having a curved facet described by the equation as set forth in the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guiyoung Lee whose telephone number is 571-272-2374. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571-272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LGY



THOMAS M. SEMBER
PRIMARY EXAMINER